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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,933	05/31/2001	Tobias W. Walker	02879.P014D	4932

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02/13/2003

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EXAMINER

CHOWDHURY, TARIFUR RASHID

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 02/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/872,933

Applicant(s)

WALKER ET AL. *W*

Examiner

Tarifur R Chowdhury

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 September 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 20 and 23-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20, 23-26, 32 and 33 is/are rejected.
- 7) ☒ Claim(s) 27-31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**3. Claims 20, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al., (Inoue), USPAT 6,175,397 in view Koichi Oguchi (Koichi), JP 56-085731.**

4. Inoue discloses and shows in Figs. 1A-1B, a liquid crystal display, comprising:

- a first substrate (2) having an optically transmissive character (col. 8, lines 61-62);
- a second substrate (1) having a reflective character (col. 6, lines 5-7) and an active area (5) bordered by a perimeter seal area (3);

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- a plurality of spacers (4) configured about the perimeter seal area (3) of the second substrate (1) so that the first and second substrates are separated by plurality of the spacers and thus creating a cell gap;
- a liquid crystal material (7) in the cell gap between the first and second substrates;

Since the method of making the liquid crystal display merely list forming each component and each component must be formed to make the device, the method of manufacturing would be inherent to the device.

Inoue does not explicitly disclose the claimed cross-over between the first and the second substrate.

Koichi discloses a liquid crystal display device wherein the active area is bordered by a perimeter seal area and a plurality of spacers are configured about the perimeter seal area (Fig. 2a) Koichi also shows that a bump (15) (applicant's cross-over) is formed between the first substrate and the second substrate (Fig. 2). Koichi further discloses that bumps (15) are formed for connecting external terminals between the substrates (abstract).

Koichi is evidence that ordinary workers in the art of liquid crystal would find a reason, suggestion or motivation to use cross-over between the first and second substrate.

Therefore, it would have been obvious to one of ordinary skill in the art at the

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time of the invention was made to modify the display device of Inoue such that form one cross-over between the first substrate and second substrate so that external terminals between the substrates are connected.

Accordingly, claim 20 would have been obvious.

As to claim 23, even though Inoue does not explicitly disclose the alignment layers, it is common and known in the art to employ alignment layers in a liquid crystal display to align liquid crystal molecules. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to employ first and second alignment layers in the liquid crystal display device of Inoue to align liquid crystal molecules.

As to claim 24, Inoue discloses about disposing a conductive coating on a bottom surface of the first substrate (2) (col. 8, lines 61-62).

**5. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue in view of Koichi as applied to claims 20, 23 and 24 above and further in view of Tsubota et al., (Tsubota), USPAT 5,629,787.**

Inoue in view of Koichi does not explicitly disclose that each of the plurality of spacers are restricted to a location that is outside of the active area. However, Tsubota discloses in column 5, lines 28- 38 that by eliminating spacers from the active area, it is possible to realize a display with no pixel defect, large in size, high contrast and high quality. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to restrict the spacers of Inoue to a location that is outside of the active area in order to obtain a display with high contrast and high quality.

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Further, coating the plurality of spacers with a sealing material is common and known in the art and thus would have been obvious to optimize device performance...

Accordingly, claims 25 and 26 would have been obvious.

**6. Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue in view of Koichi as applied to claims 20, 23 and 24 above and further in view of Miles et al., (Miles), USPAT 5,515,188.**

7. Inoue does not explicitly disclose the claimed step for positioning the substrates. However, positioning two substrates by using a bag with an opening, aligning the first substrate and the second substrate in the bag, drawing a vacuum in the bag and curing the first substrate and the second substrate is common and known in the art as evidenced by Miles and thus would have been obvious to avail a proven technique for positioning two substrates.

#### ***Allowable Subject Matter***

8. Claims 27-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 28-31 are objected due to their dependency on claim 27.

#### ***Response to Arguments***

9. Applicant's arguments with respect to claims 20 and 23-33 have been considered but are moot in view of the new ground(s) of rejection.

10. Applicant's arguments filed 09/23/02 have been fully considered but they are not persuasive.

Applicant's argument such that the limitation, "cross-over means for communicating between the first substrate and the second substrate" is not taught by Koichi since applicant's specification states that a cross-over may be thought of as an adhesive material or epoxy into which conductive material is disbursed so as to aid in creating an electrical path between the reflection mode display circuitry that resides below the reflective pixel layer of the wafer and the conductive coating layer attached to the glass cover is irrelevant since the claim language does not recite such limitations. The instant claim only recites a cross-over that communicates between the two substrates and koichi clearly shows and discloses that the bumps (15) is used to connect the external circuitry of the substrates and thus communicating between the substrates.

### ***Conclusion***

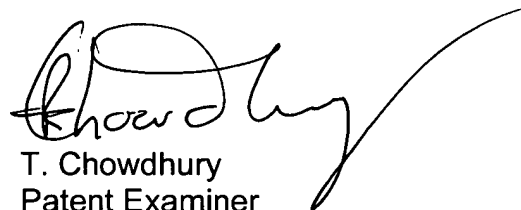
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R Chowdhury whose telephone number is (703) 308-4115. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William L Sikes can be reached on (703) 305-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7005 for regular communications and (703) 308-7724 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

A handwritten signature in black ink, appearing to read 'T. Chowdhury', with a long, sweeping horizontal line extending to the right.

T. Chowdhury  
Patent Examiner  
Technology Center 2800

TRC  
February 6, 2003